



COMPLETE  
CONVERGENCE



TOTAL  
INTEGRATION



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INTELLIGENT NETWORKING

01X/i88X/mLAN16E General Catalog

## mLAN Networking – Total system integration for the future

The IEEE 1394/FireWire interface is a common fixture on computers these days, and this high-speed data transfer standard has come full-force into the digital music and audio worlds as well.

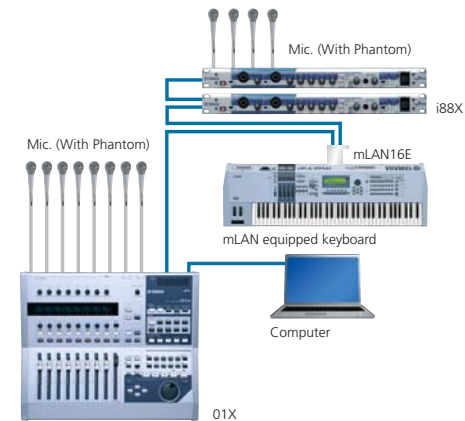
Long ago, Yamaha began exploring uses for the IEEE 1394 interface for networking digital audio, video, control and multi-port MIDI – at high speed and over long distances.

The resulting mLAN (Music Local Area Network) system provides exceptionally powerful networking features with clock and connection management. It supports up to 16 channels of bi-directional digital audio. Moreover, it does all this while offering full compatibility with the IEEE 1394/FireWire specifications.

More than 40 audio companies have already started using and supporting mLAN, with the list growing constantly. The widespread use of mLAN by major hardware manufacturers ensures seamless system expansion, letting you choose the equipment you want-and still enjoy the speed, power, flexibility and convenience of mLAN networking.

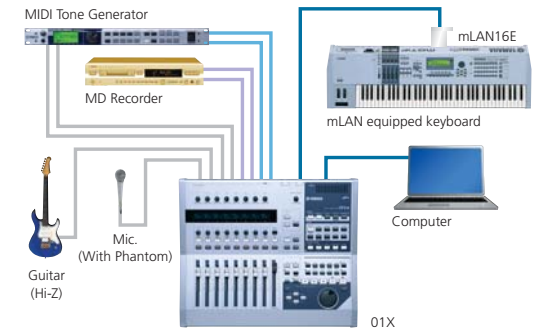
## mLAN in the real world System application examples

- mLAN (Audio & MIDI)
- MIDI
- S/P DIF (Digital)
- Analog (Audio)



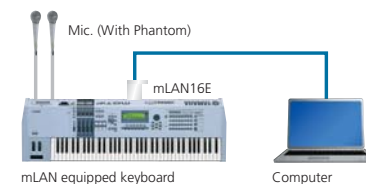
### Full band recording Using the 01X with MOTIF ES/ mLAN16E and dual i88X setup

This computer-based system turns even a bare-bones rehearsal room into a fully equipped multi-track recording studio. The 01X can handle the individual microphone inputs for recording a full drum kit, while the i88X with phantom power can be used for high-quality recording of vocals, even with condenser microphones. Use the remaining inputs and a second i88X as needed, connecting guitars and bass directly via the Hi-z terminals or using microphones to capture the sonic character of the amplifiers and cabinets. As for the keyboard, all you need is a single mLAN cable and you can record multi-part audio directly from the MOTIF ES, or record MIDI data to the sequencer. If you need to add additional sound sources, use the digital in terminals on the i88X.



### Songwriters, soundtrack composers, project studios Using the 01X with synthesizer and tone generator

Music creators of all stripes can get extensive production mileage out of this system built around the 01X. Use the MOTIF ES to record and play back your MIDI tracks, adding the MOTIF RACK tone generator for even more instrumental parts. The comprehensive mixing capabilities of the 01X – including mic inputs and a special Hi-z input for electric guitar – let you record vocals and other instruments to computer with optimum 24-bit quality, while the Remote function allows you to intuitively control your DAW sequencer right from the faders and transport buttons on the 01X panel. When creative lightning strikes, this system is the best way to capture it.



### Keyboard players, bedroom producers Using the MOTIF ES with mLAN16E as audio/MIDI interface

In this comprehensive yet highly compact and simple system, the MOTIF ES with the mLAN16E provides a complete audio/MIDI interface, DSP effects processor and control surface for your computer DAW. Play back MIDI data on the computer with the Voices of the MOTIF ES, and connect a mic or guitar to the MOTIF ES's A/D inputs to record audio to your DAW software via the mLAN16E. You can even use the assignable sliders and knobs on the MOTIF ES to control major functions and operations on your audio/MIDI sequencer.



### Recording and editing on the run Using the i88X

Put the highly portable single-unit i88X in rackmount case, and tote it along with your laptop to your friend's house or to an outdoor event for mobile recording. The system is especially convenient in the recording studio, since you can input ADAT audio via the optical terminal on the i88X, and capture eight tracks of recorded material at a time – then bring them back home and edit the data at your leisure.



**The Only 1 of its kind.**

DIGITAL MIXING STUDIO **01X**



# Total Integration

**W**hat do you get when you take a state-of-the-art digital mixer, add 24-bit/96 kHz computer audio interface and multi port MIDI I/O using mLAN, throw in two powerful 32-bit multi-effects processors, give it full DAW control capabilities, and then shrink it down in both size and price to fit the space and budget requirements of today's musicians? You get a new breed of mixer/controller, one that seamlessly integrates into computer-based recording environments, giving you complete control over both hardware and software studio components. Meet the 01X. Simply put, the 01X is everything you need to produce music on your computer with your favorite sequencing software. It combines the functions of several key studio components, including digital mixing console, DAW control surface, digital audio/MIDI interface, and multi-effects processor—all in one compact, affordable and easy-to-use unit. Similar products on the market claim to offer “complete solutions”, but none have the amount of features and level of integration that the 01X provides. Only the 01X offers all of these features and more...

## Total Mixing

Based on the same technology found in Yamaha's industry-standard DM2000, DM1000, 02R96 and 01V96 professional digital mixing consoles, the 01X gives you an arsenal of mixing power at your fingertips. For starters, it's equipped with Yamaha's newly designed microphone pre-amps to ensure the cleanest signal possible from the very beginning. Eight balanced analog mic/line inputs, including two phantom-powered XLR mic inputs and six TRS line inputs are provided, plus a stereo S/P DIF digital input for a total of 10 simultaneous hardware inputs. And with optional mLAN I/O interfaces, you can expand the 01X's input capacity to 24 discrete input and 8 discrete output channels. Compact and lightweight, the 01X can also be used for mobile mixing and recording applications—either as a stand-alone mixer or in conjunction with a laptop computer for full-blown recording and editing of your entire music production.

## Comprehensive Control Surface

The 01X offers unparalleled support for most of today's popular DAW applications, including Cubase SX, Nuendo, Logic, Sonar and Digital Performer, allowing you to control most functions in these software products using the physical faders, knobs and buttons of the 01X, rather than having to use a cumbersome mouse. Adjust the levels, panning and EQ, open and close windows, control the sequencer transport and more—all with the speed and ease

that only real knobs and faders can provide. You can even control and edit virtual instruments and effects plug-ins right from the 01X itself. Nine motorized faders work together with your DAW software's automation function to give you instant visual feedback of your mix levels during song playback. Channel knobs and buttons also let you automate panning, EQ and effects with the greatest of ease.

## All this, and built-in DSP, too!

In addition to its versatile mixing capabilities, the 01X gives you 4-band parametric EQ and full dynamics processing, including compression, gating, limiting and ducking, on every one of the 24 inputs as well as the stereo master outputs. It's also equipped with two world-class 32-bit effects processors, using the same DSP chip found in Yamaha's professional digital mixers like the DM2000 and 02R96. And unlike other integrated mixer/control surfaces on the market, the 01X lets you seamlessly use both its built-in digital effects and the plug-in effects of your DAW software anytime during a session. This allows you to reduce the burden on your computer's CPU by using the 01X's DSP for processing intensive effects, such as reverb.

## Intelligent Networking

Wouldn't it be nice if connecting your studio equipment were as easy as plugging in a single cable from one device to the next? With mLAN, the future of audio and MIDI interfacing will be that simple. Originally developed by Yamaha, mLAN is a high-speed data transfer protocol that allows many channels of digital audio, MIDI and sync information to be sent over a standard FireWire (IEEE 1394) cable. Because it is a bidirectional communication standard, one cable handles both input and output signals from one device to another. The 01X embraces the next-generation mLAN standard, giving you option to add 16 more channel inputs via mLAN in addition to the 01X's eight analog inputs.

## KEY FEATURES

- 24-bit/96 kHz Audio Inputs
- 8 Channels of Mic/Line Inputs
- 28 channel 4 buss digital mixer with 9 motorized faders
- 4 band parametric EQ and dynamics processing on each mixer channel
- Two 32 bit multi effect processors
- Multi Port MIDI Interface
- Integrated Control Surface protocols to control: Sonar, Cubase, Nuendo, Logic, Digital Performer and VST/AU plug-ins
- Includes Yamaha VST/AU Plug-ins
- Mac OS9.2 & OSX/Windows XP Driver Support



Quality in, quality out



AUDIO/MIDI INTERFACE **i88X**



# Complete Convergence

## 18-in/18-out 24-bit audio interface

The i88X is an mLAN based audio and MIDI interface delivering 24-bit sound with sample rate support from 44.1 kHz to 96 kHz. It features eight balanced analog inputs and outputs, including two combo XLR/phono microphone inputs – all with built-in 24-bit converters. Built-in ADAT Light Pipe compatibility and S/PDIF I/O allows for 18 simultaneous inputs and outputs (at 44.1 or 48 kHz; 14-channel in/out maximum for 88.2 or 96 kHz). The i88X also features built-in MIDI IN and OUT terminals for your sequencing applications.

With low jitter clock, pristine 105+ dB signal-to-noise ratio and a full complement of digital, ADAT and balanced inputs and outputs, the i88X makes it easier than ever before to get pro studio quality sound out of your digital audio system.

## Professional quality microphone preamps

The first two of the i88X's input channels feature extremely high-performance head amplifiers, and include channel insert points for maximum processing flexibility. These head amplifiers were designed by the same engineers who developed Yamaha's DM2000 and 02R96 consoles and are the result of years of feedback from world-class engineers and producers. They deliver transparent performance that rivals – and in many cases exceeds – that of the most expensive outboard microphone preamplifiers.



## Extensive I/O terminals, comprehensive routing flexibility

All analog input/output terminals feature full 24-bit A/D and D/A converters, keeping the audio in its most pristine, noise-free form. Naturally, the digital audio can be sent directly to other digital devices without conversion via the stereo coaxial/optical digital outputs – letting you record digital audio directly to your computer or mini disc recorder. An ADAT optical terminal is also included (use the OPTICAL SELECT switch on the panel to enable it), providing multi-channel transmission/reception – eight channels at 44.1/48 kHz; and four channels at 88.2/96 kHz. This four-channel or eight-channel audio data can also be recorded simultaneously to your DAW sequencer via the mLAN terminal.

## Direct monitoring

In computer-based recording, an audio delay occurs when monitoring the recorded signal. This delay, called latency, is due to the processing time needed as the audio signals pass through the various devices, especially the computer. Direct monitoring allows immediate monitoring of the recorded audio, without any resulting latency. On the i88X, all input signals (via the analog inputs 1-8, and the coaxial/optical digital inputs) can be direct-monitored from the master outs and the headphone jack.

## Windows/Mac compatibility, plus software patchbay control

Welcome to the virtual world. The i88X with its bundled mLAN Graphic Patchbay software, lets you change all your audio connections – without having to plug or unplug a single cable! Different digital signal routings can be easily configured and stored as files on your computer for instant recall. (Graphic Patchbay Software is compatible with Mac 9.2, OSX and Windows XP)

*\* Compatibility with Mac OS X currently under development.*



## KEY FEATURES

- Two DM2000 Quality Mic Preamps with Inserts
- 6 Line inputs + 8 Line outputs
- 2 Insert I/O
- 24-bit/96 kHz Audio Interface
- Balanced Inputs and Outputs
- ADAT I/O supporting 96 kHz
- 18 simultaneous channels
- Portable 1 Unit Rack
- Includes Yamaha VST/AU Plug-ins
- Mac OS9.2 & OSX/Windows XP Driver Support



# Intelligent Networking

## mLAN EXPANSION BOARD mLAN16E



### Integrate the MOTIF ES into your mLAN studio

The dual port mLAN16E lets you add mLAN capability to your MOTIF ES, transforming it into a combination audio/MIDI interface for your computer-based DAW sequencer.

Connect a microphone or electric guitar to the A/D inputs on the MOTIF ES for recording to computer. You can even use the MOTIF ES's system effects to process the signal on the way. Since the mLAN connection handles multi-channel audio, you can transfer multiple instrument parts on the MOTIF ES – up to 16 – directly in digital form to the DAW.

Connecting the MOTIF ES to the 01X via a single IEEE 1394 cable expands the number of analog input channels in your system to 10 by using the MOTIF ES's two A/D inputs. The MOTIF ES can also output 16 digital channels directly to the 01X. All of this audio can be processed through the 01X to add dynamics, 4 band Parametric EQ and additional effects. You can even route signal back from your computer to the MOTIF ES to take advantage of its system effects for processing DAW tracks, and save CPU power on your computer for other purposes. Non-mLAN keyboards and sound modules can be added into your system through analog inputs or via the S/P DIF inputs on the 01X. The 01X can also control the Multi Part Editor for the MOTIF RACK.

The mLAN Graphic Patchbay lets you easily route signals between the devices and then store those connections on your computer for instant recall. After establishing a connection with the patch software, the intelligent networking in mLAN remembers that configuration – letting you set up your 01X and MOTIF ES mLAN system at home with your computer, then take just the 01X and MOTIF ES to a gig. Simply plug them in – mLAN automatically re-establishes the last routing for you – and you're ready to rock.



### KEY FEATURES

- 24-bit/96 kHz 16 channel expansion I/O for MOTIF ES
- Multi Port MIDI Interface
- Expandable via mLAN
- Mac OS9 & OSX/Windows XP Driver Support



## mLAN Graphic Patchbay

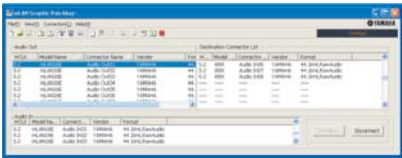
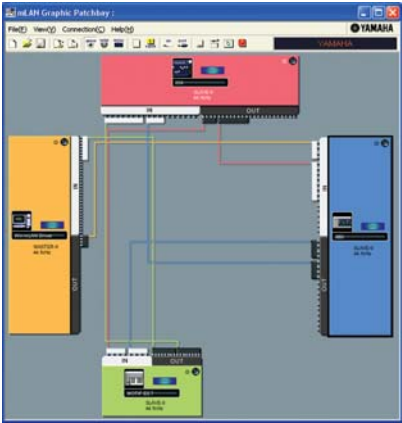
### Comprehensive control over your virtual mLAN studio

The beauty of the mLAN system is in its simplicity. All audio, MIDI, clock and control signals are handled by the bi-directional mLAN cables, eliminating the need for complicated, messy and often noise-generating cabling systems. With the mLAN Graphic Patchbay software, even hardware patchbays are now relics of the past – letting you completely set up and control your entire mLAN system right from your computer.

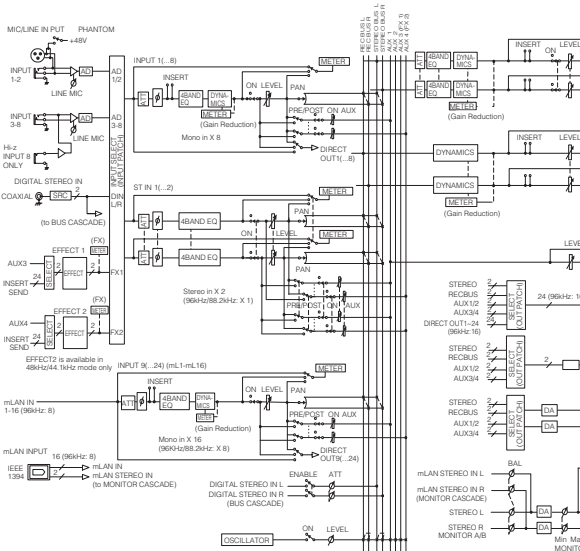
The mLAN Graphic Patchbay gives you comprehensive, easy-to-use tools for managing connections among various mLAN devices, using a graphic interface to connect and disconnect virtual audio and MIDI cables. This enables a seamless system, with full computer control over your mLAN network. The mLAN devices are connected to each other by a single FireWire cable, and the multi-channel audio data passing through the cable is controlled on the computer. You simply use the mouse to drag the virtual “cables,” and connect them as desired to the inputs/outputs of the various mLAN devices (called “nodes”). The software also lets you route wordclock inputs and outputs as needed to reliably synchronize all connected devices.

Naturally, you can route the signals as you like and save the connections as a file for instant recall, or even create your own template files for basic setups and applications – which can be called up and reconfigured as needed. Create different connection schemes for each recording session or song, and switch between them instantly. Moreover, mLAN Graphic Patchbay can be used either as a stand-alone program or as a plug-in within any Open Plug-in Technology (OPT) compatible application.

Elegant, simple, comprehensive – the mLAN Graphic Patchbay puts all your studio connections together, and gives you a level of system control and convenience that is truly unprecedented.



Block Diagram

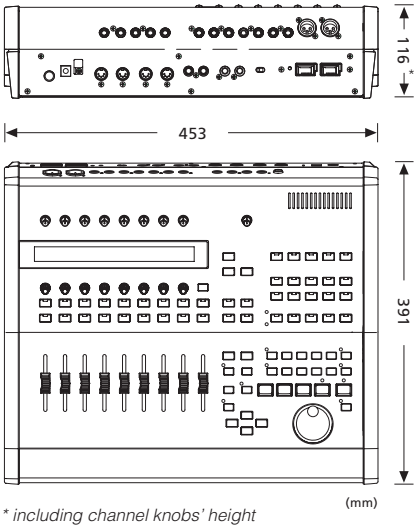


Specifications

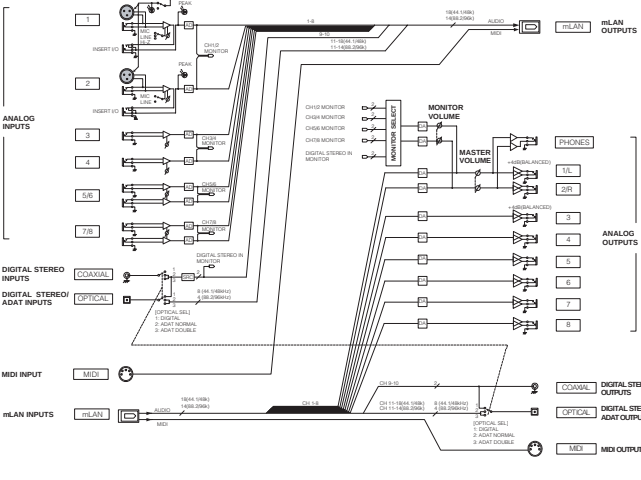
General Specifications

|                            |                       |                                                                                                         |                                                  |
|----------------------------|-----------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| Internal Signal Processing |                       | 32-bit (Accumulator 58-bit)                                                                             |                                                  |
| Sampling Frequency         |                       | Internal, External                                                                                      |                                                  |
| Frequency Response         | Fs 44.1 kHz, 48 kHz   | 20 Hz ~ 20 kHz                                                                                          | Normal Rate: Fs 44.1 kHz (-10 %) ~ 48 kHz (+6 %) |
|                            | Fs 88.2 kHz, 96 kHz   | 20 Hz ~ 40 kHz                                                                                          | Double Rate: Fs 88.2 kHz (-10 %) ~ 96 kHz (+6 %) |
| Total Harmonic Distortion  |                       | Less than 0.02 %                                                                                        | 0 +1/3 dB, MIC/LINE IN to STEREO OUT (Fs 48 kHz) |
| Dynamic Range              |                       | 103 dB                                                                                                  | 0 +1/3 dB, MIC/LINE IN to STEREO OUT (Fs 96 kHz) |
| Noise Level                |                       | -105 dBV                                                                                                | 1 kHz, LINE IN to STEREO OUT (Input Gain = Min.) |
| Crosstalk                  |                       | 70 dB                                                                                                   | LINE IN to STEREO OUT                            |
| A/D, D/A Converter         |                       | 24 bit Linear, 128 times over sampling (Fs 44.1, 48 kHz) / 64 time over sampling (Fs 88.2, 96 kHz)      |                                                  |
| Mixer Section              |                       |                                                                                                         |                                                  |
| Mixing Channel             |                       | 28 ch Digital Mixing (Fs 44.1 kHz, 48 kHz) / 18 ch Digital Mixing (Fs 88.2 kHz, 96 kHz)                 |                                                  |
| Input                      | MIC / LINE Input      | 8 ch (Hi-Z input switching possible on channel B)                                                       |                                                  |
|                            | mLAN Input            | 16 ch (Fs 44.1 kHz, 48 kHz) / 8ch (Fs 88.2 kHz, 96 kHz)                                                 |                                                  |
|                            | mLAN Monitor Input    | 2 ch (Stereo x 1) can be cascaded to Monitor Out (Adjustable mix balance with Stereo Bus)               |                                                  |
|                            | Stereo Input          | Stereo x 2 (in combination with Effect Return) (Fs 44.1 kHz, 48 kHz) / Stereo x 1 (Fs 88.2 kHz, 96 kHz) |                                                  |
|                            | Digital Input         | Stereo x 1                                                                                              |                                                  |
| Oscillator                 | Digital Cascade Input | Stereo x 1 (can be cascaded to Stereo Bus) (with attenuator)                                            |                                                  |
|                            |                       | Sine (100 Hz, 1 kHz, 10 kHz) / Noise, 0 dB ~ -96 dB (1 dB step)                                         |                                                  |
|                            |                       | Stereo Bus, Rec Bus, output to Aux 1~4 possible                                                         |                                                  |
| Output                     | Stereo Bus            | 2 ch (Stereo x 1)                                                                                       |                                                  |
|                            | Rec Bus               | 2 ch (Stereo x 1)                                                                                       |                                                  |
|                            | Aux Bus               | 2 ch (Send 1, 2)                                                                                        |                                                  |
|                            | Effect Bus            | 2 ch (Send 3, 4) (in combination with Aux 3, 4)                                                         |                                                  |
|                            | mLAN output           | 24 ch (Fs 44.1 kHz, 48 kHz) / 16 ch (Fs 88.2 kHz, 96 kHz)                                               |                                                  |
| Effector                   |                       | 2 units (43 preset types) (Fs 44.1 kHz, 48 kHz) / 1 unit (Fs 88.2 kHz, 96 kHz)                          |                                                  |
|                            |                       | 24 ch (A/D Input x 8 ch, mLAN Input x 16 ch) (Fs 44.1 kHz, 48kHz) / 16 ch (Fs 88.2 kHz, 96 kHz)         |                                                  |
|                            |                       | 2 ch (Fs 44.1 kHz, 48 kHz) / 1ch (Fs 88.2 kHz, 96 kHz)                                                  |                                                  |
| Channel Module             | MIC/LINE Input        | Attenuator, Phase, Insert, 4-Band EQ, Dynamics, Aux Send 1 ~ 4, Level, Pan                              |                                                  |
|                            | Stereo Input          | Attenuator, Phase, 4-Band EQ, Aux Send 1 ~ 4, Level, Pan                                                |                                                  |
| Output Module              | Stereo Output         | Attenuator, 4-Band EQ, Dynamics, Insert, Level, Pan balance                                             |                                                  |
|                            | Rec Bus Output        | Dynamics, Insert, Level                                                                                 |                                                  |
|                            | Aux 1 ~ 4 Output      | Level                                                                                                   |                                                  |
| Interface Section          |                       |                                                                                                         |                                                  |
| mLAN                       | Audio I/F             | 18 ch Input / 24 ch Output (Fs 44.1 kHz, 48 kHz), 10 ch Input / 16 ch Output (Fs 88.2 kHz, 96 kHz)      |                                                  |
|                            | MIDI I/F              | 5 ports Input / 5 ports Output (for DAW, MIDI-A, MIDI-B, Studio Manager and Scene Recall Control)       |                                                  |

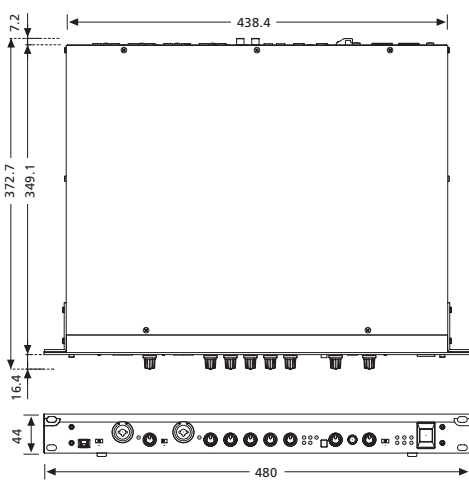
Dimensions



Block Diagram



Dimensions



Specifications

General Specifications

|                           |                     |                                                                                                                                                                                                              |                                                                                                                    |
|---------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Sampling Frequency        |                     | Internal, External                                                                                                                                                                                           | Normal Rate: Fs 44.1 kHz (-10 %) ~ 48 kHz (+6 %) <sup>*1</sup><br>Double Rate: Fs 88.2 kHz (-10 %) ~ 96 kHz (+6 %) |
| Frequency Response        | Fs 44.1 kHz, 48 kHz | 20 Hz ~ 20 kHz                                                                                                                                                                                               | 0+1/-3dB, Input to Master Output L/R (Fs 48kHz, Mic/Line)                                                          |
|                           | Fs 88.2 kHz, 96 kHz | 20 Hz ~ 40 kHz                                                                                                                                                                                               | 0+1/-3dB, Input to Master Output L/R (Fs 96kHz, Mic/Line)                                                          |
| Total Harmonic Distortion |                     | Less than 0.01 %                                                                                                                                                                                             | 1kHz, Line Input to Master Output L/R (Input Gain = Min, Output Vol = Max)                                         |
| Dynamic Range             |                     | 110 dB                                                                                                                                                                                                       | Line Input to Master Output L/R (1/2 ch) or 3 ~ 8 ch                                                               |
| Noise Level               |                     | -100 dBu (Output Vol = Min.), -90dBu (Output Vol = Max.)                                                                                                                                                     |                                                                                                                    |
| Crosstalk                 |                     | 75 dB                                                                                                                                                                                                        | 1kHz                                                                                                               |
| A/D, D/A Converter        |                     | 24bit Linear, 128 times over sampling (Fs 44.1, 48kHz) / 64 time over sampling (Fs 88.2, 96kHz)                                                                                                              |                                                                                                                    |
| Interface                 |                     |                                                                                                                                                                                                              |                                                                                                                    |
| mLAN Transmitting Rate    |                     | S400 (400Mbps)/S200 (200Mbps)                                                                                                                                                                                |                                                                                                                    |
| mLAN                      | Audio I/F           | 18ch Input / 18ch Output (Fs 44.1kHz, 48kHz) : Input (Analog) 8ch, Digital Input 2ch, ADAT Input 8ch<br>14ch Input / 14ch Output (Fs 88.2kHz, 96kHz) : Input (Analog) 8ch, Digital Input 2ch, ADAT Input 4ch |                                                                                                                    |
|                           | MIDI I/F            | 1 port Input / 1 port Output                                                                                                                                                                                 |                                                                                                                    |

Input & Output Characteristics

|                              |                      |             |                  |                       |
|------------------------------|----------------------|-------------|------------------|-----------------------|
| Analog Input Characteristics |                      |             |                  |                       |
| INPUT 1, 2                   | Connector in Console | Input Level | Max. Input level | Actual Load Impedance |
|                              |                      |             |                  |                       |
| INPUT 3 ~ 8 IN               | Connector in Console | Input Level | Max. Input level | Actual Load Impedance |
|                              |                      |             |                  |                       |
| INSERT 1 ~ 2                 | Connector in Console | Input Level | Max. Input level | Actual Load Impedance |
|                              |                      |             |                  |                       |

|                               |                      |              |                  |                                            |
|-------------------------------|----------------------|--------------|------------------|--------------------------------------------|
| Analog Output Characteristics |                      |              |                  |                                            |
| OUTPUT 1 ~ 8 (MASTER OUT L/R) | Connector in Console | Output Level | Max. Input level | Output Impedance (Actual Source Impedance) |
|                               |                      |              |                  |                                            |
| INSERT 1 ~ 2 OUT              | Connector in Console | Output Level | Max. Input level | Output Impedance (Actual Source Impedance) |
|                               |                      |              |                  |                                            |
| PHONES                        | Connector in Console | Output Level | Max. Input level | Output Impedance (Actual Source Impedance) |
|                               |                      |              |                  |                                            |

Digital Input & Output Characteristics

|                        | Connector in Console | Format                             | Level       | Note                              |
|------------------------|----------------------|------------------------------------|-------------|-----------------------------------|
| ADAT/DIGITAL IN, OUT   | OPTICAL              | ADAT 'S'                           | –           | Double Ch. (for 96kHz)            |
| DIGITAL STEREO IN, OUT |                      | IEC-60958 (Consumer use) (DIGITAL) | –           |                                   |
| MIDI IN, OUT A/B       |                      | IEC-60958 (Consumer use)           | 0.5Vpp/75 Ω | Sampling Rate Converter for Input |
| mLAN 1/2               |                      | MIDI                               | –           | S400/S200                         |
|                        |                      | IEEE1394 6pin                      | mLAN        | –                                 |

- \*1: Sampling Frequency (from Adat) Normal Rate: Fs 44.1kHz (-6%) ~ 48kHz (+6%)  
Double Rate: Fs 88.2kHz (-6%) ~ 96kHz (+6%)
  - \*2: XLR/TRS phone combo receptacles are balanced. (1+GND, 2+HOT, 3=COLD / Tip+HOT, Ring=COLD, Sleeve=GND)
  - \*3: Balanced Phone (Tip+HOT, Ring=COLD, Sleeve=GND)
  - \*4: Insert In/Out connectors are Unbalanced phone (Tip=OUTPUT, Ring=INPUT, Sleeve=GND)
  - \*5: ALESIS proprietary multi-channel optical digital interface format
- In these specifications, when dBu represents a specific voltage, 0 dBu is referenced to 0.775 Vrms.

Others

|                      |                                                                               |
|----------------------|-------------------------------------------------------------------------------|
| Supplied Accessories | Power Adaptor (PA-300), Owner's Manual set, CD-ROM x 2, mLAN (IEEE1394) cable |
| Power Consumption    | 16W                                                                           |
| Dimensions           | 480(W) x 372.7(D) x 44(H) (mm)                                                |
| Weight               | 3.9kg                                                                         |

mLAN System Requirements

- IEEE1394 (i.Link) or Firewire Port supporting S400 (400Mbps) transfer rates is required. If no such port is installed on your computer, please use PCI or PCMCIA adapters to add this capability.
- System requirements listed below are based on testing with DAW applications software and the bundled software effects plug-ins.
- Detailed information on recommended PCI and PCMCIA IEEE1394 cards can be found at <http://www.yamahasynth.com>

Windows®

Support OS: Windows XP Professional / Home Edition

|     |                                               |                                                                      |
|-----|-----------------------------------------------|----------------------------------------------------------------------|
|     | Recommended                                   | Minimum                                                              |
| CPU | Intel® Pentium® 2.2GHz                        | Intel® Pentium® 1.2GHz or faster<br>Intel® Celeron® 1.7GHz or faster |
| RAM | 512MB or more                                 | 384MB or more                                                        |
| HDD | 500MB or more free area, High performance HDD |                                                                      |

Macintosh®

Support OS: Macintosh OS 9.2 and OS X

|     |                                               |                                                           |
|-----|-----------------------------------------------|-----------------------------------------------------------|
|     | Recommended                                   | Minimum                                                   |
| CPU | G4/G3 900MHz or faster                        | G4/G3 Single 700MHz or faster<br>G4 Dual 450MHz or faster |
| RAM | 512MB or more                                 | 320MB or more                                             |
| HDD | 170MB or more free area, High performance HDD |                                                           |

mLAN16E

Specifications

|                        |                                            |                                                                                                                |  |
|------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------|--|
| Functions              |                                            |                                                                                                                |  |
| Data Rate              | S400, S200                                 | (Automatically set by included mLAN Graphic Patchbay.)                                                         |  |
| Audio Input and Output | 16 in, 16 Out                              | (4 Stereo In, 16 Out when MOTIF ES is connected.)                                                              |  |
| Sampling rate          | 44.1kHz, 48kHz, 88.2kHz, 96kHz (+6%, -10%) | (Enables you to match other sampling frequencies in the network without changing the rate on the mother unit.) |  |
| MIDI connectors        | 6 in, 6 Out                                | (4 in, 4 Out when MOTIF ES is connected.)                                                                      |  |

|                   |                                                                                                  |
|-------------------|--------------------------------------------------------------------------------------------------|
| Jitter adjustment | Slow/Fast mode (Specified by included mLAN Graphic Patchbay or Auto Connector.)                  |
| Display           | LED                                                                                              |
| Jacks             | ACTIVE (blue)<br>To IEEE1394<br>6-pin x 2<br>To Mother<br>100P                                   |
| Dimensions        | 127(W) x 164.5(D) x 36(H) mm                                                                     |
| Weight            | 325g (excluding mother unit connecting cables)<br>415g (including mother unit connecting cables) |